



INHIBITION OF NONINACTIVATING Na CHANNELS OF MAMMALIAN
OPTIC NERVE AS A MEANS OF PREVENTING OPTIC NERVE
DEGENERATION ASSOCIATED WITH GLAUCOMA

5 Abstract of the Invention

A method and composition for altering a plausible sequence of pathological events in retinal ganglion cells associated with glaucoma, the sequence including membrane
10 depolarization, influx of millimolar amounts of Na⁺ via non-inactivating Na⁺ channels, and the lethal elevation of cell Ca²⁺ due to reversal of the Na⁺/Ca²⁺ exchanger. The method includes blocking, by administration of a selected composition, of associated, non-inactivating Na⁺ channels in
15 retinal ganglion cells in order to limit Na⁺/Ca⁺ exchange in the retinal ganglion cells and prevent buildup of the Ca²⁺ level in the retinal ganglion cells to a lethal level. The results in a method of preventing retinal ganglion cell death, associated with glaucoma, by administering to the
20 optic nerve of a mammal, a compound which blocks the non-inactivating sodium ion channels of the optic nerve. Alternately, said invention relates to a method of preventing optic retinal ganglion cell death in a human by administering to the retinal ganglion cells of said human a
25 compound which blocks the non-inactivating sodium ion channel of the retinal ganglion cells.